

GHS Classification

ID605

2,4,5-T

CAS 93-76-5

Date Classified: Sep. 1, 2005 (Environmental Hazards: Mar. 31, 2006)

Physical Hazards

Reference Manual: GHS Classification Manual (Feb. 10, 2006)

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Explosives	Not applicable	-	-	-	There are no chemical groups associated with explosive properties present in the molecules.
2 Flammable gases	Not applicable	-	-	-	Solid (GHS definition)
3 Flammable aerosols	Not applicable	-	-	-	Not aerosol products
4 Oxidizing gases	Not applicable	-	-	-	Solid (GHS definition)
5 Gases under pressure	Not applicable	-	-	-	Solid (GHS definition)
6 Flammable liquids	Not applicable	-	-	-	Solid (GHS definition)
7 Flammable solids	Classification not possible	-	-	-	Although there is information that it is inflammable (however, flame proofs), there is no data with defined test method.
8 Self-reactive substances and mixtures	Not applicable	-	-	-	There are no chemical groups associated with explosive or self-reactive properties present in the molecule.
9 Pyrophoric liquids	Not applicable	-	-	-	Solid (GHS definition)
10 Pyrophoric solids	Classification not possible	-	-	-	No data available
11 Self-heating substances and mixtures	Classification not possible	-	-	-	Although there is information of flammable (however, flame retardant), no data based on a set test method.
12 Substances and mixtures, which in contact with water, emit flammable gases	Not applicable	-	-	-	The chemical structure of the substance does not contain metals or metalloids(B, Si, P, Ge, As, Se, Sn, Sb, Te, Bi, Po, At).
13 Oxidizing liquids	Not applicable	-	-	-	Solid (GHS definition)
14 Oxidizing solids	Not applicable	-	-	-	Organic compounds containing oxygen and chlorine (but not fluorine) and these elements are chemically bonded only to carbon and hydrogen (but not to other elements).
15 Organic peroxides	Not applicable	-	-	-	Containing no -O-O- structure
16 Corrosive to metals	Classification not possible	-	-	-	Test methods applicable to solid substances are not available.

Health Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
1 Acute toxicity (oral)	Category 4	Exclamation mark	Warning	Harmful if swallowed	Based on rat LD50 value: 500 to 750 mg/kg (DFGOT vol.11, 1998), the lowest value was adopted and it was set as Category 4.
1 Acute toxicity (dermal)	Category 4	Exclamation mark	Warning	Harmful in contact with skin	Based on rat LD50 value: 1535mg/kg (RTECS, 2005) and >5000mg/kg (HSDB, 2005), the lowest value was adopted and it was set as Category 4.
1 Acute toxicity (inhalation: gas)	Not applicable	-	-	-	Solid (GHS definition)
1 Acute toxicity (inhalation: vapour)	Classification not possible	-	-	-	No data available
1 Acute toxicity (inhalation: dust, mist)	Classification not possible	-	-	-	No data available
2 Skin corrosion / irritation	Category 2	Exclamation mark	Warning	Causes skin irritation	It was classified as Category 2 from description that the skin is stimulated (ICSC (J) (1995), HSDB (2005), HSFS (2001), and SITTIG (4th, 2002)).
3 Serious eye damage / eye irritation	Category 2A	Exclamation mark	Warning	Causes serious eye irritation	From description that the eye of the rat is stimulated strongly (DFGOT (vol.11, 1998) , and from description that the eye is stimulated (ICSC (J) (1995), HSDB (2005), HSFS (2001), and SITTIG (4th, 2002)), it was set as Category 2A .
4 Respiratory/skin sensitization	respiratory sensitization: Classification not possible; Skin sensitization: Classification not possible	-	-	-	Respirator: No data Skin : Although a possibility of putting it outside of the Category is considered from the description that any allergic nature was not identified in the guinea pigs of DFGOT (vol.11, 1998), it was judged that the test method was not clear enough and data was not sufficient enough to put it outside of the Category.
5 Germ cell mutagenicity	Not classified	-	-	-	The substance was regarded as outside the categories. Because of negative results from dominant lethal tests in rats and mice (DFGOT vol.11, 1998, IARC 41, 1986), chromosome aberration tests using hamster spermatogenic cells (DFGOT vol.11, 1998, IARC Suppl. 7 1986), and chromosome aberration tests and micronucleus tests using mouse bone-marrow cells (DFGOT vol.11, 1998).
6 Carcinogenicity	Not classified	-	-	-	Chlorophenoxy herbicides is classified into 2B according to IARC (41, 1987). But 2,4,5-T was classified into A4 according to ACGIH (7th, 2001). Therefore, it carried out the outside of category based on the segment of ACGIH which is the latest evaluation.

7	Toxic to reproduction	Category 1B	Health hazard	Danger	May damage fertility or the unborn child	There are descriptions that the result which indicates teratogenicity or increase of abortions is not obtained in an epidemiological study (ACGIH (7th, 2001), DFGOT (vol.11, 1998), and IARC (45, 1998)). However, in the study using mouse and rat, there is a description that specific reproductive toxicity was observed with the dose which general toxicity is not observed in parental animals (DFGOT (vol.11, 1998)). Therefore, it was classified into Category 1B.
8	Specific target organs/systemic toxicity following single exposure	Category 3 (respiratory tract irritation)	Exclamation mark	Warning	May cause respiratory irritation or may cause drowsiness and dizziness (respiratory tract)	It was set as Category 3 (respiratory tracts irritation) based on the description that the respiratory tracts are irritated (ICSC (J) (1995), HSDB (2005), HSFS (2001), and SITTIG (4th, 2002)).
9	Specific target organs/systemic toxicity following repeated exposure	Category 1 (skin); Category 2 (kidneys, immune system)	Health hazard	Danger; Warning	Causes damage to organs (skin) through prolonged or repeated exposure; May cause damage to organs (kidneys, immune system) through prolonged	It was classified to Category 1 as the skin is considered target organ because of the description that chloracne is found in the manufacturing workers of DFGOT (vol.11, 1998). Moreover, it was classified to Category 2 as kidney and immune systems are considered target organ because of the description that the renal effects and decrease of white corpuscles were acknowledged in guidance value Category 2 by the oral study using the rats of DFGOT (vol.11, 1998), and because of the description that lymphopenia was acknowledged in guidance value Category 2 by the oral study using the dogs of ACGIH (7th, 2001).
10	Aspiration hazard	Classification not possible	-	-	-	No data available

Environmental Hazards

Hazard class	Classification	symbol	signal word	hazard statement	Rational for the classification
11 Hazardous to the aquatic environment (acute)	Category 1	Environment	Warning	Very toxic to aquatic life	It was classified into Category 1 from 96-hour LC50=0.98mg/L of fishes (Rainbow trout) (HSDB, 2004) .
11 Hazardous to the aquatic environment (chronic)	Category 1	Environment	Warning	Very toxic to aquatic life with long lasting effects	Classified into Category 1, since acute toxicity was Category 1, supposed not rapidly degrading (BIOWIN), though supposed less bioaccumulative (log Kow=3.31(PHYSROP Database, 2005)).